

The continued importance of measuring potentially harmful impacts of crime prevention programs: the academy of experimental criminology 2014 Joan McCord lecture

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Abstract

Objective Joan McCord was a very influential criminologist and strong advocate for measuring potentially harmful effects in well-meaning crime prevention programs. This paper demonstrates the continued importance of measuring adverse program effects by reviewing the available research evidence on classic and contemporary gang streetworker programs.

Methods This paper draws upon the evaluation findings of existing gang streetworker evaluations and presents the unpublished results of a rigorous quasi-experimental evaluation of a contemporary gang streetworker program that directly measured whether the intervention impacted the violent gun behaviors of treated gangs relative to untreated gangs.

Results Evaluations of classic pre-1970s gang streetworker programs generally found that these interventions increased gang delinquency by reinforcing group identity and enhancing gang cohesion. Evaluations of contemporary gang streetworker programs are mixed, with several studies documenting concerning increases in gang violence. An unpublished evaluation found that the streetworker program was well-implemented and executed. However, the intervention was associated with increased shootings by and against treatment gangs relative to control gangs.

Conclusion These findings suggest that contemporary gang streetworker programs are at high risk of generating unintended adverse outcomes for treated gang members relative to their untreated counterparts. Existing and planned programs should be monitored with a high degree of vigilance and evaluated with controlled evaluation designs.

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Introduction

In the edited volume *Fifty Key Thinkers in Criminology*, David Farrington (2009:179) described Joan McCord as a “brilliant pioneer in criminology” and identified her work on the longitudinal Cambridge-Somerville Youth Study randomized experiment as her most outstanding contribution to criminological knowledge. As Farrington (2009) acknowledged, McCord certainly made many important contributions over the course of her career (for a collection of her works, see Sayre-McCord 2007), such as her study of the impacts of child-rearing practices on subsequent adult criminal behavior (McCord 1979). However, the Cambridge-Somerville Youth Study yielded a variety of critical insights into the childhood antecedents of delinquent behavior and, famously, was among the first studies to demonstrate unintended harmful effects of a well-meaning prevention program (McCord 1978, 1981, 1992). Her subsequent advocacy for evaluators to measure potential harmful effects in crime prevention programs represents a central aspect of her scholarly legacy.

Other scholars have expressed concern that too many investigators fail to ask whether crime prevention programs had adverse effects and too many research reviews lack systematic reporting of iatrogenic outcomes (e.g., see Sherman 2007; Sherman et al. 1997; Welsh and Rocque 2014; Werch and Owen 2002). Drawing on her experiences and channeling the perspectives of a growing chorus of evidence-based crime policy advocates, Joan McCord (2003) made some critical observations on how to improve our knowledge on harmful program impacts. She rightly observed that publication bias contributed to the lack of attention to adverse outcomes, as scientific journals are more likely to publish studies that reported positive treatment effects. To minimize the so-called “file-in-the-drawer” problem (Rosenthal 1979), she greatly encouraged systematic reviews that searched the so-called “grey literature” for unpublished studies that might report negative program impacts.

McCord (2003) also advanced the argument that high-quality designs, with balanced comparison groups, were essential in establishing whether a program generated desired or undesired impacts on study participants. Without the benefit of a counterfactual, it is difficult for program evaluators to identify harmful outcomes. If treated subjects experienced adverse effects relative to comparison subjects, the study could immediately be halted and unintended harm minimized. Not surprisingly, Joan McCord (2003: 29) was a strong advocate for increasing the number of randomized controlled trials in criminology, making the well-known suggestion, “whenever possible” evaluation studies “should employ random assignment.”

This paper attempts to honor Joan McCord’s rich criminological legacy by reaffirming the importance of measuring potentially harmful impacts of crime prevention programs. The renewed popularity of gang street outreach (commonly called gang “streetworker”) programs, despite evaluation studies suggesting that treated subjects risk adverse outcomes, underscores the relevance of McCord’s call for continued vigilance in this area. The paper begins by briefly reviewing the work of McCord and others who found that certain well-meaning individual crime prevention programs

generated harmful effects on treated groups of delinquent youth. Theoretical mechanisms associated with adverse program outcomes, such as construct theory, are then discussed. A narrative review subsequently documents that gang streetworker programs have also generated unintended harmful impacts by increasing group identity and gang cohesion.

The paper then presents the unpublished findings of a controlled evaluation of a Boston gang streetworker program that revealed this well-intentioned program generated undesirable increases in gun violence by treated gangs relative to control gangs (Hureau et al. 2014). Consistent with prior streetworker program evaluations (Klein 1971; Wilson and Chermak 2011), the unpublished evaluation suggests that these harmful impacts may have been driven by the Boston program's emphasis on group processes already in place that inadvertently increased gang cohesiveness and, in turn, gang violence. In effect, the Boston gang streetworker program seemed to reinforce group identity and strengthen connections among gang youth. The paper concludes with a discussion of the implications of the Boston gang streetworker program findings for gang violence reduction policy and practice.

Unanticipated outcomes of crime prevention programs that grouped delinquent peers

In one of her final published papers titled "Cures That Harm," Joan McCord (2003) lamented that researchers, practitioners, and policy makers were too narrow in their quest to identify effective crime prevention programs. She argued that it was inappropriate to simply ask whether a program "worked or not" as this question failed to recognize that well-intentioned treatments can sometimes cause harm. Well-planned and adequately-executed crime prevention programs provide no guarantees for public safety or crime prevention efficacy. Programs could increase crime, drug use, diminish life coping skills, result in premature death, or undermine deterrent impacts of criminal justice sanctions. McCord (2003:18) powerfully stated, "Social programs deserve to be treated as serious attempts at intervention, with possibly toxic effects, so that a science of intervention can prosper." She supported this assertion by reviewing her experiences in detecting harmful outcomes in the follow-up analysis of boys in the landmark Cambridge-Somerville Youth Study.

The Cambridge-Somerville Youth Study began in 1939 as an experiment in which 650 boys from the Boston area cities of Cambridge and Somerville were matched into pairs based on data obtained from physical examinations, interviews with the boys and their families, and detailed case histories (McCord 1978; Powers and Witmer 1951). Based on a coin flip, boys in each pair were randomly allocated to treatment and control conditions. Boys in the treatment group received individual counseling and home visiting while boys in the comparison group received no services. The full range of treatment services included: regular meetings between the counselors and the boys, recreational activities and trips, tutoring in math and reading, encouragement to attend church, attendance at summer camps, and the provision of advice and general support to the boys' families (McCord and McCord 1959). Due to austerity measures following the United States' entry to World War II, the program was scaled back to include only 253 pairs of boys. The program lasted an average of five and a half years when the boys

were between 10 and 16 years of age. Initial evaluation results were disappointing, with almost equal numbers of treatment and control boys doing better than anticipated at the commencement of the program (Powers and Witmer 1951).

Between 1975 and 1981, McCord and her research team were able to locate roughly 98 % of the 253 matched pairs of boys. Unfortunately, her follow-up analyses of the Cambridge-Somerville Youth Study participants found a variety of adverse program impacts. Relative to the control boys, the treated boys were more likely to have been arrested for a serious crime, died an average of five years younger, and were more likely to have received a medical diagnosis as alcoholic, schizophrenic, or manic depressive (McCord 1978, 1981, 1992). She also found that adverse program effects increased with increased intensity and duration of treatment, and that adverse effects only occurred among boys whose families cooperated with the program. Finally, repeated placement in summer camp resulted in strong iatrogenic impacts (Dishion et al. 1999). Close association with summer camp peers that the boys wanted to impress seemed to lead to increased deviance. As McCord (2003:22) explained:

At summer camp, misbehaving boys would have unsupervised time during which they would be likely to brag about deviance. A bragging effect would be particularly noticeable among those sent to camp more than once. After the first summer, these boys would have known what camp was like and be in a position to estimate the effects of their reported daring (whether or not these reports were factual).

McCord (2003) identified four other rigorous evaluations of well-meaning crime prevention programs that yielded unanticipated bad outcomes for participants. These programs often involved the grouping of delinquent peers. A randomized experiment testing the impacts of a court volunteer program to provide group and individual counseling and tutoring services to juvenile probationers found that treated subjects committed more crimes relative to control subjects (Berger et al. 1975). Two randomized experiments evaluating group interaction training programs, generally designed to improve the social skills of potential delinquents by giving them practice in discussing issues with well-adjusted peers, found increases in misbehavior and delinquency in high school students (Gottfredson 1987) and problematic behavior among aggressive youth (Dishion and Andrews 1995) relative to their untreated counterparts. A randomized experimental evaluation of an activity program designed to provide healthful recreation to delinquent adolescents found that treated youth significantly increased recidivism after the program stopped relative to control youth (Dufty and Richard 1978). Finally, “Scared Straight” and other juvenile awareness programs, intended to halt offending by directly exposing groups of delinquent youth to stressful prison experiences (i.e., during a brief prison visit, adult inmates intimidate the youth in an attempt to scare them straight), have been found to increase recidivism among treated youth relative to control youth (Lewis 1983; Petrosino et al. 2004).

Other reviews of individual-based crime prevention program evaluations have also identified unexpected harmful effects that seem to be associated with delinquent peer grouping (Cécile and Born 2009; Rhule 2005). These reviews further suggest that harmful effects vary by program types and the negative influence of delinquent peers can be reduced by including more structured activities, enhanced supervision of group

interactions, the inclusion of pro-social peers in groups, and familial involvement. Weiss et al. (2005), however, suggest that the harmful impacts of delinquent groupings in crime prevention programs have been overstated. They argue that the exposure that occurs during these programs represents only a fraction of the negative peer influence these youth experience on a daily basis. Moreover, Weiss et al. (2005) observed that negative peer socializing is not part of the treatment so it is incorrect to suggest that the programs are causing the deviant behavior.

More recently, Welsh and Rocque (2014) conducted a methodologically-informed review of 15 Campbell systematic reviews of individual-based crime prevention programs that included some 574 studies with 645 independent effect sizes. They identified 22 harmful or undesirable program effects from 22 unique studies of individual crime prevention programs (3.4 % of 645 effect sizes). Underscoring the importance of comprehensive searches for eligible program evaluations in the grey literature, roughly two-thirds of these adverse outcomes were reported by unpublished studies. Harmful and undesirable impacts were reported in evaluations of a wide range of interventions, from anti-bullying programs at schools to second responder interventions involving the police. Boot camps and drug courts accounted for the largest share of studies with harmful effects. Welsh and Rocque (2014) concluded that the grouping of deviant peers, along with implementation and theory failure, was a leading explanation for the observed harmful effects in these crime prevention programs.

Theorizing harmful impacts of grouping delinquent peers in prevention programs

The “construct theory of motivation” was developed to understand how close association with peers that youth wanted to impress could lead to increased deviant behavior. Construct theory, also known as deviancy training, suggests that people construct their motives by the way they perceive choices and their perceptions are shaped by the perceived actions of their peers (McCord 1997, 1999, 2000). This theory was applied to understand the harmful effects of summer camp on the Cambridge-Somerville Youth Study boys (Dishion et al. 1999). Essentially, the summer camp boys took their behavioral motivational cues from each other. Delinquent behavior was expected to enhance their reputation in the eyes of their peers. As such, they were more likely to engage in deviant behavior than boys who did not attend summer camp. In this way, antisocial behavior was contagious within groupings of delinquent peers.

A small number of empirical studies have explicitly examined the problem of deviancy training in crime prevention programs (e.g., see Gottfredson 2010). For instance, in Montréal, an analysis of the impact of varying juvenile court sanctions on the later criminal behavior of treated youths found that criminogenic impacts were associated with enhanced individual supervision and intensive supervision activities that aggregated youth into peer groups (Gatti et al. 2009). In their analysis of an after-school program, Rorie et al. (2011) found that juveniles had positive reactions to deviant behavior of their delinquent peers and that these positive reactions were more likely to occur during less-structured activities.

Harmful program effects have also been associated with other causal mechanisms. Labeling theory suggests that the terms used to describe and classify individuals may determine or influence their behavior (Becker 1973; Lemert 1951; Tannenbaum 1938).¹ Stigmatizing labels are suggested to exert negative influences on a person's self-concept and social identity. Research has supported the perspective that deviant individuals exhibit more problematic behavior after being labeled (Lopes et al. 2012; Paternoster and Iovanni 1989; Sampson and Laub 1997). For instance, participation in juvenile justice interventions has been suggested to confer a stigmatizing label on youth that can increase delinquent behavior. Gatti et al. (2009) suggested that negative impacts of the juvenile justice program they studied may have been due to both labeling effects and deviancy training effects.

Eckblom and Pease (1995) suggest more general explanations for harmful program effects: measurement failure, theory failure, and implementation failure. Measurement failure occurs when an evaluation design is not rigorous enough or executed properly to detect the "true" impact of the program being tested. Well-designed and implemented randomized experiments and quasi-experiments generally address measurement problems. Theory failure occurs when the prevention mechanism or idea was unsound from the outset. Faulty prevention frameworks, that may have unexpectedly romanticized inmate lives and/or challenged youth to prove they were not scared, have been suggested to generate the backfire effects observed in scared straight programs (Finckenauer 1982). Implementation failure occurs when the prevention idea was sound but not properly implemented. Welsh and Rocque (2014) suggest that implementation problems were the likely causes of adverse impacts in some of the drug court programs and incarceration-based drug treatment programs that they reviewed. The Cambridge-Somerville Youth Study is recognized as being a rigorously-designed longitudinal randomized experiment with a well-implemented treatment (Zane et al. 2015). As such, the iatrogenic effects observed by McCord (2003) seem likely to be generated by theory failure.

Gang involvement has been demonstrated to have a very large negative effect on individual behavior among gang members (e.g., see Thornberry et al. 2003). Gang cohesion, often described as group solidarity and characterized by the robustness of group identities and the strength of relationship ties among gang members, has long been theorized to be related to gang crime and delinquency (Klein 1971; Spergel 1995). A stronger sense of "groupness" amplifies internal social processes and potentially generates unique gang norms, behaviors, and structures (Papachristos 2013; Thrasher 1927). Higher levels of cohesion among members of particular gangs are associated with increased levels of criminal and delinquent behavior. A solid theoretical and empirical case can be made that gang intervention programs that emphasize group processes already in place in gangs can increase gang cohesiveness and, therefore, gang crime (Klein and Maxson 2006). Gang outreach worker programs, commonly called

¹ Beyond the application of construct theory to understand the strong backfire effects of summer camp, McCord (1981) developed other hypotheses to explain the harmful effects of the Cambridge-Somerville Youth Study on treated boys relative to untreated boys. Most notably, McCord (1981) suggested that the Cambridge-Somerville Youth Study boys in the treatment group may have suffered a labeling effect. Other possible explanations included (1) the counselors imposed middle-class values on lower-class youth that simply did not work for them, (2) the boys in the treatment group became dependent on the counselors and lost a key source of support when the program ended, and (3) the support of the counselors raised the treatment boys' expectations that could not be sustained, and disillusionment set in after the program was completed.

“streetworker” programs, have been found to strengthen group identity, increase gang cohesion, and, as a result, generate higher levels of antisocial behavior among gang members (Klein 2011). These unintended harmful effects have been found in classic studies of gang streetworker programs (Klein 1971) and modern program evaluations of streetworker programs designed to reduce serious gang violence (Wilson and Chermak 2011).

Adverse program effects in early street worker programs

Four high-quality evaluations inform our understanding of adverse program effects in early (pre-1970) streetworker programs.² During this time period, delinquency reduction programming was generally designed to “transform” delinquent gangs into pro-social groups (Spergel 2007). The first rigorous evaluation tested the “Total Community Gang Control Project” operating in Boston’s Roxbury neighborhood between 1954 and 1957 (Miller 1962). This project was designed to reduce neighborhood adolescent delinquency by deploying an intervention aimed at three ecological levels: the community, the family, and the gang. The main delinquency reduction intervention involved the assignment of seven professionally-trained streetworkers to develop relationships with and deliver services to 21 Roxbury gangs. Seven of these targeted gangs received “intensive” attention from at least one of the streetworkers. Streetworkers were directed “to contact, establish relations with, and attempt to change resident gangs” (Miller 1962: 169). Unfortunately, the quasi-experimental impact evaluation revealed that the treatment gangs showed no improvement on a variety of delinquency measures when compared to counterpart control gangs. Rather, increases in delinquency were detected among several categories of offending—particularly increases in serious offending among younger gang members, and among males relative to their female counterparts (Miller 1962).

The Chicago Youth Project, an initiative of the Chicago Boys’ Clubs from 1960 through 1966, followed the same basic logic of Miller’s “total community” approach. However, this project placed greater emphasis on community organization, included outreach to non-gang youth, and made greater use of data and research to refine its outreach efforts (Gold and Mattick 1974). An evaluation led by researchers at the University of Michigan’s Institute for Social Research revealed that the targeted gang-based streetworker interventions did not generate any delinquency prevention gains. Moreover, the greatest delinquency increases were experienced by youth who were served most intensively by their assigned streetworkers. While the project showed some promise in finding employment opportunities and reengaging school dropouts, the quasi-experimental evaluation results suggested that youth living in the target intervention neighborhoods were slightly worse off on a variety of delinquency and pro-social indicators than youth living in control neighborhoods (Gold and Mattick 1974; Spergel 1995).

² The well-known Chicago Area Project (CAP), designed by University of Chicago sociologist Clifford Shaw, was one of the earliest and most influential gang streetworker programs. The CAP model employed local adults to outreach gang youth with group activities and social service opportunities in order to drive down neighborhood crime. Spergel (2007) has noted that CAP’s outreach workers were among the first “curbstone counselors”—individuals with ties to both the neighborhood and gangs dedicated toward group and individual transformation. Unfortunately, CAP was never rigorously evaluated to establish its impacts on gang delinquency.

The Los Angeles Group Guidance Project was sponsored by the Los Angeles County Probation Department and operated between 1961 and 1965 (Klein 1969, 1971). The Group Guidance Project employed a “transformational” streetworker approach to engage four majority-black Los Angeles gangs, broken into 16 subgroups comprised of approximately 800 members. This project relied heavily on a streetworker-led group programming approach which featured surprising little employment, educational, and community organizing content. Much of the group-based programming involved meetings, sports, trips, and other recreational activities. Similar to previous streetworker evaluations, Klein (1969, 1971) found that the Group Guidance Project was associated with a significant increase in delinquency among the gang members served, and the gangs most intensively served performed the worst on a variety of delinquency indicators. Drawing on carefully constructed streetworker contact data and ethnographic field notes, Klein (1969, 1971) reasoned that gang delinquency increased as a result of enhanced gang cohesion and increased gang recruitment fueled by large amounts of group-based programming.

Klein (1971) specifically designed the 1965–1966 “Ladino Hills Project” to avoid the adverse program impacts of the Group Guidance Project. This Los Angeles-based project engaged a single Mexican gang for 18 months, with a six-month follow-up period of data collection. The Ladino Hills project dispensed with all group programming in an effort to reduce gang cohesion and, as a result, gang delinquency. In place of the group-based programming employed by streetworkers in the Group Guidance Project, the Ladino Hills streetworkers (aided by Klein’s research staff) provided educational and employment opportunities to gang youth that were explicitly designed to wean away members from the gang. While the project did not significantly affect rates of offending for gang members, Klein (1971) reported that overall crime by the gang was reduced by curtailing gang membership and recruitment.

Investigating potentially harmful impacts in contemporary gang streetworker programs

Streetworker programs implemented in the 1950s and 1960s generally sought to control gang fighting, address individual problems through social services, provide access to opportunities, change delinquent values, and reduce individual and group delinquency (e.g., see Spergel 1966). Contemporary streetworker programs share these goals and have placed a strong emphasis on reducing community violence (Hureau et al. 2014). These early streetworker programs failed to reduce gang delinquency and, as described above, some programs increased delinquent behavior. Although a variety of streetworker and gang outreach programs proliferated over the course of the youth violence epidemic of the late 1980s and early 1990s (e.g., see Kennedy 2011), most of these programs were not formally evaluated. Evaluations of contemporary streetworker programs have generally found mixed impacts on gang violence (Papachristos 2011; Skogan et al. 2009; Webster et al. 2012), with several studies showing null and harmful effects (Fox et al. 2015; Wilson and Chermak 2011). Table 1 provides a summary

Table 1 Summary comparison of classic and contemporary streetworker program evaluations

	“Classical”	“Contemporary”
Outcome	Delinquency	Gun violence
Intervention theory	Gang transformation	Public health/violence interruption
Implementation	Full; aided by researchers	Mixed; implementation failures
Key findings	Null or increased delinquency	Mixed; proclaimed “successes”
Unit of analysis	Group/individual	Areas/neighborhoods

Adapted from Hureau et al. (2014)

comparison of key aspects of gang streetworker program evaluations from the 1970s and earlier (denoted as “classic” studies) with more contemporary gang street worker evaluations.

Recent interest in the evaluation of streetworker programs has been driven by CeaseFire Chicago (now known as Cure Violence; <http://cureviolence.org/>) and the various replication demonstrations it has inspired. In the CeaseFire Chicago gang violence reduction model, one set of outreach workers maintains contact with at-risk individuals and aims to broker services and pro-social opportunities, while “violence interrupters” focus solely on the mediation of violent disputes and the prevention of retaliation. Other facets of CeaseFire’s programming extend beyond the streetworker approach to reveal its public health underpinnings. Specifically, the program aims to promote broad-based, population-level shifts in attitudes toward the acceptability of the use of violence, akin to previous public health campaigns targeting issues such as smoking cessation and seatbelt use. Furthermore, the CeaseFire model prescribes the promotion of various community-level campaigns aimed at both community attitude change and the enrollment and mobilization of community members in responding to high-profile violent events (Papachristos 2011; Skogan et al. 2009; Wilson and Chermak 2011).

The available evidence on the violence reduction impacts of this influential streetworker program is mixed, with more evidence supporting positive program effects. Skogan et al. (2009) used a quasi-experimental design to compare shooting trends in neighborhoods that experienced the CeaseFire Chicago intervention relative to shooting trends in comparison neighborhoods. Their analyses suggested that CeaseFire neighborhoods experienced significantly fewer shootings (ranging from 16 % to 34 %) when compared to their comparison counterparts. However, companion analyses of the CeaseFire Chicago program, using slightly different datasets and other analytic approaches, found that the program generated much more modest impacts, with roughly half of the treated neighborhoods demonstrating significant violence reductions while the others showed a null effect (see technical appendices by Block and Papachristos in Skogan et al. 2009; Papachristos 2011). Using a similar longitudinal quasi-experimental design, Henry et al. (2014) recently found a revamped CeaseFire Chicago streetworker intervention, which included strategic partnerships with the Chicago Police Department, was associated with significant reductions in violence in treated neighborhoods relative to comparison neighborhoods.

Subsequent replication streetworker programs have generated much more mixed results.³ A quasi-experimental evaluation of Newark's Operation Ceasefire program, which blended Chicago CeaseFire streetworker violence interruption tactics with strategic law enforcement action, found no evidence of a statistically significant decrease in gunshot injuries in the Ceasefire areas compared with similar neighborhoods (Boyle et al. 2010). Pittsburgh's "One Vision One Life" program used streetworkers to reduce gang violence through conflict mediation and the provision of services and opportunities to at-risk individuals. Using a quasi-experimental, neighborhood-level, difference-in-differences analysis, program evaluators found that the One Vision program had no effect on the incidence of homicide and was associated with a statistically significant *increase* in aggravated assaults and gun assaults in its target neighborhoods (Wilson and Chermak 2011). The evaluators specifically noted that the presence of streetworkers may have increased the cohesion of gangs, making some groups more organized, in turn leading to increased violence.

Baltimore's "Safe Streets" streetworker program represents a rigorous Chicago CeaseFire replication that was piloted in four of Baltimore's most violent neighborhoods between 2007 and 2010. Webster and colleagues (2012, 2013) used a quasi-experimental design to analyze Safe Streets' impact on homicide and non-fatal gun violence trends in treated areas relative to homicide and non-fatal gun violence trends in comparison areas. Importantly, the evaluation attempted to control for other law enforcement and social service interventions affecting the incidence of gun violence. Only one program site (Cherry Hill) evidenced significant declines in both homicides and nonfatal shootings, although two others showed overall reductions in gun violence (driven largely by decreases in nonfatal shootings). A single program site (Madison-Eastend) experienced a statistically significant *increase* in homicides, accompanied by a significant decrease in nonfatal shootings. The Phoenix TRUCE Project was also modeled after the Chicago CeaseFire program. While community partnerships were weak, program evaluators found that this gang streetworker program engaged in a strong media campaign, conducted conflict mediations, and identified high-risk individuals for case management (Fox et al. 2015). A quasi-experimental evaluation found that the TRUCE program generated reductions in overall violence but also resulted in significant *increases* in shooting incidents.

One key limitation of the available scientific evidence on the impact of these contemporary streetworker programs on serious violence is that changes in group and individual violent behaviors are not directly measured by program evaluators (Hureau et al. 2014). Unlike the "classic" streetworker evaluations (e.g., Klein 1971; Miller 1962), contemporary evaluations analyze aggregated area-level data on violent outcomes in treated and untreated areas. Even with comparison areas, it remains difficult to know whether the behavior of treated groups and the individuals that comprised them significantly changed as a result of the intervention without directly measuring outcomes at more refined units of analysis. With the support of colleagues, the author of

³ The scientific evidence reviewed here excludes the evaluation of the "Save Our Streets" (SOS) streetworker program in the Crown Heights neighborhood of Brooklyn (Picard-Fritsche and Cerniglia 2013) due to a very weak evaluation design that did not adequately control for rival causal factors. The evaluation also made implausibly large violence reduction claims for a police district of some 96,000 residents given the scale of the program (only four outreach workers who managed just 96 clients—only 68 % of whom were classified as "high risk" for involvement in gun violence).

this article served as the Principal Investigator of a gang streetworker program evaluation enterprise explicitly designed to determine whether the intervention produced any significant changes in violent group behavior in Boston, Massachusetts (Hureau et al. 2014). This unpublished work is summarized here.

The StreetSafe Boston gang streetworker program

Like many cities, serious gun violence in Boston is concentrated among a small number of gangs engaged in ongoing conflicts (Braga 2003; Kennedy et al. 1996). A recent analysis found that only 1 % of Boston's youth between the ages of 14 and 24 were gang members, but that Boston gangs generated more than half of gun homicides and were involved in more than two-thirds of non-fatal shootings as victims, offenders, or both (Braga et al. 2008). Launched by The Boston Foundation (TBF) at the end of June 2009, StreetSafe Boston (SSB) was a gang streetworker program specifically aimed at reducing serious gun violence by gangs in the South End, Dudley, Grove Hall, Bowdoin-Geneva, and Morton-Norfolk neighborhoods of Boston (Hureau et al. 2014; <http://www.tbf.org/tbf/61/ssb>). The initiative was framed as an action research project and Harvard University researchers were engaged to provide ongoing analytic support to guide implementation and conduct a rigorous program evaluation. When SSB was launched, the Harvard research team identified 66 Boston gangs that were actively engaged in gun violence. In consultation with the Boston Police Department (BPD) and other partner agencies, TBF subjectively selected 20 gangs for the SSB treatment based on their association with one of the five targeted neighborhoods, historic and current levels of gun violence, and perceived risk for continued violent gun behaviors.

Many readers will question the decision made by TBF to implement a gang streetworker program given the existing evaluation literature suggesting harmful effects associated with these kinds of programs. It is important to note here that the former Vice President of Programs for TBF and lead architect of the SSB program, Robert Lewis Jr., was once a city-employed streetworker in Boston during the 1990s. Drawing on his personal experiences and strong claims of noteworthy gang violence reduction gains being made by Chicago CeaseFire, Lewis was convinced that gang streetworker programs could be used to good effect in reducing gun violence in Boston. As such, Lewis played a central role in designing, raising operational funds, and implementing the SSB program.

The SSB intervention was comprised of two complementary violence reduction strategies (Hureau et al. 2014). The first strategy involved street-level conflict negotiation and mediation work conducted by streetworkers. Briefly, the SSB streetworker strategy depended on the ability of streetworkers to connect and build meaningful relationships with the gang members they served in order to mediate and resolve gang conflicts and/or interrupt cycles of ongoing gang violence. SSB generally deployed 15 streetworkers to develop relationships with and serve members of the 20 treatment gangs. Most streetworkers were assigned to a single gang and a small number of streetworkers were assigned to serve two closely-allied gangs. While a single streetworker served as the primary point of contact for each gang, streetworkers often collaborated in serving treatment gangs. This was especially true of streetworkers working in the same neighborhood and during times of stress and conflict when strategic problem-solving approaches were required to mediate disputes and negotiate resolutions.

The second SSB violence reduction strategy involved the delivery of social services to treatment gang members. Complementing the work of the streetworkers, program coordinators addressed the service needs of individuals embedded in treatment gangs by offering case management and needs assessment services, serving as brokers to social service and opportunity provision programming in Boston, and steering individuals away from gang-involved activities and toward structured life-skills, education, and employment opportunities. In addition to referrals to external service providers, the “in-house” StreetSafe Transitional Employment Program (STEP) blended three weeks of intensive pre-employment training with three months of subsidized employment through community employment partners.

The Harvard research team conducted process and impact evaluations (Hureau et al. 2014). The methods and findings of the impact evaluation are summarized in the next section. The process evaluation involved a blend of quantitative analyses of administrative data, ethnographic observations of work performed by program coordinators and streetworkers, and extensive interviews of SSB staff, partnering agencies, and treated gang members. While SSB experienced some implementation challenges, the process evaluation concluded that the program was well managed and achieved full implementation (Hureau et al. 2014). In particular, the process evaluation noted that SSB staff maintained deep and broad relationships with treatment gang members and, by its fourth year of implementation, streetworkers had engaged more than 92 % of the 426 individuals known to be active participants in the treatment gangs.

Impact evaluation

A non-randomized, quasi-experimental design was used to analyze serious gun violence trends for Boston gangs that received the SSB treatment relative to serious gun violence trends for comparison Boston gangs that did not receive the SSB treatment (Shadish et al. 2002).⁴ Serious gun violence was measured using BPD computerized records of assault and battery with firearm incident reports (hereafter “shooting” incidents). These data represent shooting events where guns were fired and victims were physically wounded by the fired bullets. The “crime incident review” process was used to determine the motive for the shooting incidents, whether a shooting event involved a gang member as a suspect, victim, or both, and the specific gangs involved (Braga et al. 2014b; Klofas and Hipple 2006). The units of analysis in the SSB evaluation were quarterly counts of shootings by and against specific Boston gangs between July 1, 2006 and June 30, 2013.

Since gangs were not selected randomly for treatment, the Harvard research team needed to develop a comparable counterfactual group of gangs to determine whether the SSB intervention generated the desired gun violence reduction impact. Drawing on prior evaluation designs used to detect changes in the gun violence behaviors of Boston

⁴ Using the Maryland Scientific Methods Scale (Sherman et al. 1997) as a standard, the SSB quasi-experimental design with matched treatment and control groups would be considered a “Level 4” evaluation as it measured outcomes before and after the program in multiple treatment and control condition units. These types of designs have better statistical control of extraneous influences on outcomes and, relative to lower-level evaluations, deal with selection and regression threats more adequately. The Scientific Methods Scale ranked scientific studies from Level 1 (weakest) to Level 5 (strongest) on overall internal validity. Properly implemented randomized experiments were rated highest on the scale and observational studies lowest.

gangs subjected to focused deterrence programs (Braga et al. 2013, 2014a), comparison gangs were identified by analyzing basic demographic information and covariates associated with violent gang behavior. These covariates included pre-treatment shooting counts, gang size, gang race/ethnicity, number of active conflicts with rival gangs, gang longevity, gang turf located in a housing project area, and concentrated disadvantage in the neighborhood surrounding gang turf. Three different analytic approaches were used to match treated SSB gangs to comparable untreated Boston gangs: theoretically-informed matching (Rossi et al. 2006), propensity score matching (Rosenbaum and Rubin 1983, 1985) and coarsened exact matching (Blackwell et al. 2009; Iacus et al. 2012). With each matching method, comparison groups were selected from the available pool of 46 potential comparison groups. Each potential comparison group was a non-SSB gang active in Boston during the entire 7-year evaluation period.

The three distinct matching methods produced similar results, bolstering the evaluation team's confidence in the overall findings. The results from the theoretically-informed matching exercise are described here; interested readers should review Hureau et al. (2014) for the full set of results. A variation of a multi-level negative binomial regression model was used to analyze the quarterly change in gang-involved shootings for treatment and comparison gangs over a 7-year observation period ($n=28$ quarters). Specifically, growth curve regression models (Gelman 2005; Singer and Willett 2003) were used to analyze panel data on street gang shooting incidents over the evaluation time period. A difference-in-differences (DID) estimator (see, e.g. Card and Krueger 1994) was used to estimate of the impact of the SSB treatment on total shootings involving treated gangs ($n=20$) relative to total shootings involving comparison gangs in Boston ($n=20$). The growth curve regression models also included covariates to control for seasonal variations and linear and non-linear secular trends.

Results

From the perspective of a one-group-only pre-post comparison, the SSB treatment seemed to prevent gun violence by gangs subjected to the intervention. During the three years preceding the launch of the program, the 20 SSB gangs averaged 112.3 total shootings per year. After the SSB program was implemented, the treated gangs averaged 86.8 total shootings per year during the 4-year treatment period, suggesting a 23 % reduction in gang-involved shootings committed by and against the treated gangs. Unfortunately, the quasi-experimental evaluation revealed the 20 matched untreated gangs experienced a steeper reduction in total shootings during this same time period. Figure 1 shows the trend in the mean yearly number of total shootings for the 20 SSB gangs as compared to the trend in the mean yearly number of total shootings for the 20 matched untreated gangs. SSB gangs averaged 5.6 total shootings per year during the pre-intervention period and averaged 4.3 total shootings per year during the treatment time period, representing a 23 % reduction in total shootings. Total yearly mean shootings by matched untreated gangs, however, decreased by 31 % from 4.9 shootings per year during the pre-intervention period to 3.4 shootings per year during the treatment time period.

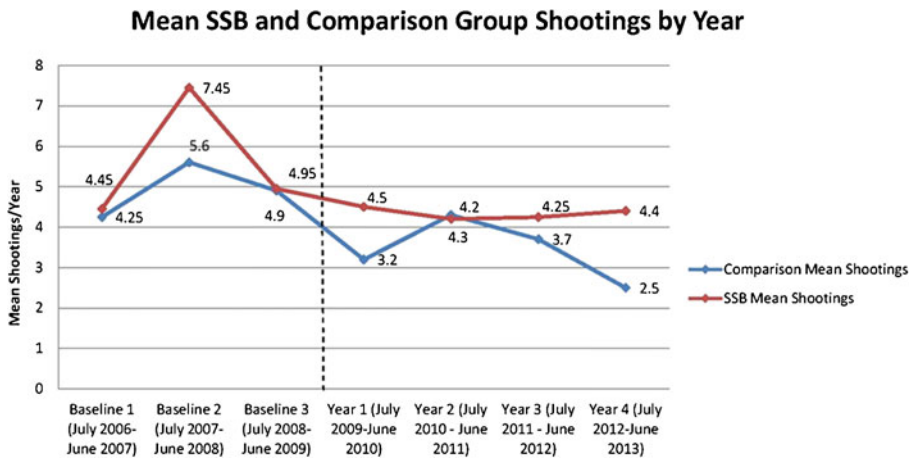


Fig. 1 Adapted from Hureau et al. (2014)

The growth curve regression models confirmed that the SSB gangs experienced higher levels of gun violence when compared to the matched untreated gangs. Controlling for trends and seasonal variations, the DID estimator found that the SSB treatment was associated with a statistically significant 14 % increase in total shootings when comparing pre-intervention and intervention periods for the treatment and comparison gangs ($p < .05$). The statistical analysis further suggested that the observed “backfire effect” was influenced by a larger increase in shootings committed by treatment gangs. For incidents where gangs were identified as the suspected shooters, the SSB treatment was associated with a statistically significant 17 % increase in shootings committed by treated gangs relative to shootings committed by matched untreated gangs ($p < .05$). For incidents where gangs were identified as shooting victims, the SSB treatment was associated with an estimated 10 % increase in shootings suffered by treated gangs relative to shootings inflicted upon matched untreated gangs ($p < .10$).

It is worth noting here that the SSB evaluation would have revealed a noteworthy reduction in total shootings by and against treated gangs if the research design did not include comparison gangs. Similarly, McCord (2003) noted that, without a control group, evaluators would have concluded that the Cambridge-Somerville Youth Study was effective in reducing delinquent behavior. This underscores the importance of rigorous evaluation designs that include counterfactuals in detecting potentially harmful program impacts.

Discussion

It seems very unlikely that the iatrogenic impacts observed in the SSB evaluation were due to implementation failure. Indeed, the process evaluation concluded that the SSB program was well managed and, over the course of four years, streetworkers managed to keep ongoing contact with the vast majority of the members of the treated gangs. Hureau et al. (2014) further reported that streetworkers engaged in conflict negotiation and mediation work and that many gang members received services and opportunities through the program’s service delivery strategy. The SSB program seemed to be implemented as planned.

The SSB evaluation also did not suffer from measurement failure. The SSB quasi-experimental design used matched treatment and control groups and measured outcomes before and after the program in multiple treatment and control condition units. The SSB evaluation also directly measured whether treatment and control gangs changed their violent gun behaviors during the study time period. In a series of interim reports (Hureau et al. 2014), the Harvard research team conducted supplementary area-level quasi-experimental analyses to determine whether the program had broader impacts on treated neighborhoods relative to untreated areas of Boston. These analyses yielded null program effects. If the SSB evaluation was limited to area-level analyses, like other contemporary evaluations of streetworker programs (Boyle et al. 2010; Skogan et al. 2009; Webster et al. 2012, 2013), the adverse effects of the program on gang behavior would not have been detected.

The research team consistently reported in interim reports to the SSB program staff that comparison gangs were involved in lower levels of gun violence when compared to gun violence generated by the treatment gangs. However, the outcome differences between the two groups were not statistically significant during Years 2 and 3. The evaluation team noted the concerning trends but, during that time period, reported the differences as null effects to TBF overseers and SSB program staff. Since treated gangs were experiencing decreasing levels of gun violence during the post-implementation time period (Figure 1), these findings were generally interpreted by SSB staff as evidence that the treatment gangs needed stronger dosages of SSB violence prevention work rather than evidence of potentially harmful impacts. The harmful impact of the SSB intervention was not noted as a statistically significant effect until the final evaluation report was completed at the end of Year 4.

It seems likely that the harmful impacts of the SSB streetworker program were generated by theory failure. The SSB program was powerfully influenced by the apparent success of CeaseFire Chicago and program developers drew directly on key CeaseFire intervention ideas. Little attention seemed to be paid to the extended criminological and sociological literature on the potential backfire effects that may occur when doing prevention work with delinquent groups more generally and using streetworkers to change violent behaviors of gangs specifically. While the Harvard research team is in the process of empirically investigating SSB program dynamics, anecdotal evidence from the process evaluation suggests that the SSB intervention may have strengthened gang identity and cohesion by its extensive use of group-based programming (Hureau et al. 2014). Indeed, given the harmful effects demonstrated in prevention programs that treat groups of delinquents (McCord 2003; Welsh and Rocque 2014), classic gang streetworker programs (Klein 1971; Miller 1962), and some contemporary gang streetworker programs (Wilson and Chermak 2011), the adverse effects observed in the SSB evaluation are not surprising.

Moreover, SSB exclusively hired former gang members, many of whom had spent extensive time in prison, as streetworkers. In his critical analysis of contemporary streetworker programs, Klein (2011) identified pressing issues that need to be considered when using former gang members as streetworkers. Given their “street cred” and life experiences, former gang members are well positioned to establish rapport with current gang members and usually have a deep knowledge of local gang conflicts and alliances. However, when sharing past experiences, former gang members can

inadvertently glorify gang life while developing relationships with active gang members and foster gang identification and cohesion by reifying group processes and dynamics. Moreover, streetworkers who are former gang members have been reported to hinder interagency collaborations due to their reluctance to share information on their assigned gangs with partnering agencies (especially law enforcement agencies). Finally, former gang members sometimes return to criminal behavior while serving as gang interventionists; as Klein (2011:1039) observed, “You can take the member out of the gang, but sometimes you cannot take the gang out of the member.” Over the course of the program, four SSB streetworkers were arrested for charges ranging from assaulting a police officer to counterfeiting to drug dealing (Allan 2014). All four were subsequently fired by TBF.

In late fall 2014, TBF made the decision to close down the SSB streetworker program due to budget constraints and the negative program evaluation results. The City of Boston, however, decided to hire the SSB streetworkers to supplement the Boston Centers for Youth Families (BCYF) streetworker program (Allan 2014). BCYF streetworkers engage in similar “violence interruption” work but are more generally assigned to work in specific neighborhoods and connect both gang and non-gang youth to services and opportunities. Drawing on the lessons from the SSB experience, the BCYF streetworker program, and gang streetworker programs operating in other jurisdictions, would be well advised to focus their gang outreach practices on understanding and responding to group dynamics without reinforcing group identity and cohesion. Streetworkers can be oriented towards addressing individual situations rather than focusing on bringing together groups of gang members. These activities could take many forms. For instance, streetworkers should actively attempt to prevent younger kids from joining gangs when they first start “hanging around” with older gang peers. As previous researchers have noted, overall gang delinquency might be reduced not only by addressing group dynamics but also by reducing the size of the gang itself (Klein 1971). To this end, streetworkers could prioritize attempts to facilitate peaceful exits from gang life and be trained to recognize opportunities for “peeling off” gang members whose situations allow for it.

BCYF streetworkers are also key partners in the Operation Ceasefire focused deterrence strategy, a program that has been rigorously evaluated and shown to produce significant reductions in gang-related gun violence in Boston (Braga et al. 2001, 2013, 2014a). Streetworkers add a much needed social service and opportunity provision component to law enforcement action in these strategies and help deliver credible anti-violence messages to gang members. Indeed, as suggested by Kennedy (2011), streetworkers may be effective when they work *in partnership with others* and as an element in a more robust violence prevention strategy.

The SSB experience, in conjunction with past research on effective gang violence prevention in Boston and elsewhere (Braga and Weisburd 2012), suggests that the problem of preventing the next gang shooting from happening may be too big for any one agency or program to handle by itself. The presence of street gangs, and the violence generated by their conflicts, stem from very complicated and longstanding underlying social conditions in urban neighborhoods (Bursik and Grasmick 1993; Klein 1995). The value of streetworker programs may be better understood as a necessary component of a larger network of capacity (Moore 2002) to reduce gang violence rather than the sole response to this very complicated problem.

Conclusion

Joan McCord (2003) called for more targeted research to discover whether crime prevention programs generated unintended harmful impacts on participants. Moreover, she suggested that program evaluators and policy makers needed to pay close attention to the complex interplay of program features, client characteristics, settings, evaluation design quality, and other salient factors and dynamics when considering positive, null, and negative effects. The bulk of the research evidence presented here, highlighted by the Boston experience, suggests that gang streetworker programs are at high risk of generating unintended adverse outcomes for treated gang members relative to their untreated counterparts. Indeed, given the existing evidence base, jurisdictions suffering from gang violence problems should be advised to avoid implementing gang streetworker programs. Steering policy makers and practitioners away from prevention programs that risk generating toxic backfire effects would be most consistent with Joan McCord's legacy.

Violence prevention programs are unfortunately sometimes implemented without full consideration of the extant research evidence. Indeed, the implementation of the SSB gang streetworker program was strongly influenced by the personal experiences of a high-ranking TBF executive and supported by a single highly positive program evaluation of the well-known Chicago CeaseFire streetworker program. In these instances, existing and planned programs should be monitored with a high degree of vigilance and evaluated with controlled evaluation designs. This will allow harmful streetworker programs to be immediately shut down if harmful impacts are observed and facilitate the acquisition of new knowledge on program features associated with the varying effects shown in evaluations of contemporary streetworker programs. Doing so would also be a very appropriate way to honor Joan McCord's legacy.

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